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(12) **United States Patent**  
Loveday et al.(10) Patent No.: **US 6,274,684 B1**  
(45) Date of Patent: **\*Aug. 14, 2001**(54) **CATALYST COMPOSITION, METHOD OF  
POLYMERIZATION, AND POLYMER  
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Houston, TX (US)(\*) Notice: Subject to any disclaimer, the term of this  
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U.S.C. 154(b) by 0 days.This patent is subject to a terminal dis-  
claimer.(21) Appl. No.: **09/425,387**(22) Filed: **Oct. 22, 1999**(51) Int. Cl.<sup>7</sup> ..... **C08F 4/44**(52) U.S. Cl. .... **526/114; 526/160; 526/172;  
526/348.2**(58) Field of Search ..... **526/160, 172,  
526/943, 348.2, 114**(56) **References Cited****U.S. PATENT DOCUMENTS**

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*Primary Examiner*—Peter D. Mulcahy*Assistant Examiner*—William Cheung(74) *Attorney, Agent, or Firm*—Lisa Kimes Jones; Jaimes Sher(57) **ABSTRACT**

Catalyst compositions and methods, useful in polymerization processes, utilizing at least two metal compounds are disclosed. At least one of the metal compounds is a Group 15 containing metal compound and the other metal compound is preferably a bulky ligand metallocene-type catalyst. The invention also discloses a new polyolefin, generally polyethylene, particularly a multimodal polymer and more specifically, a bimodal polymer, and its use in various end-use applications such as film, molding and pipe.

**21 Claims, No Drawings**